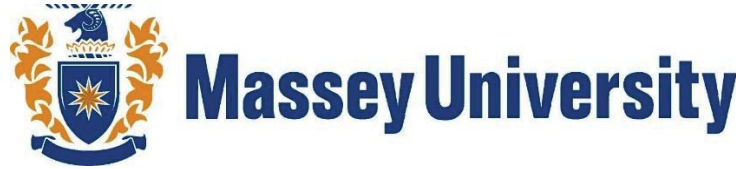


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**Modeling New Zealand's Log's Supply Chain:
A Two-Tiered Modeling Approach of Logistical Network Resilience**

A thesis presented in partial fulfillment of the requirement for the degree

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Abstract

The global characteristic of today's market raise concerns regarding the compatibility between the different nodes within a supply chain. Political, economic, infrastructural, cultural and other risks should be considered when operating globally. Tsunamis, strikes, hurricanes, bio-security threats and wars and their impact on the logistical networks are all examples of major events that might happen in a certain place and affect other supply chain members in other parts of the world. This type of events and their disastrous consequences show the importance of being ready and having a contingency plan for such events to minimize their effect on the companies' supply chains

The objective of this research is to provide the building bricks of a tool that functions as a decision support system to help practitioners in the log industry deciding their course of action spontaneously in response to sudden major events that might disrupt their supply chains. The resulting decision support system and recommendations of this research aim at improving the resilience of the log supply chain in New Zealand and the logistical network in general. Hopefully, the resulting DSS will be capable of producing recommendations that would increase the profitability of logs supply chain and make it more reliable and resilient under multiple disruption scenarios.

The proposed decision-making approach and the suggested improvements in this research provide an in-depth insight for policy makers and practitioners operating in the logistical network in New Zealand. This research provides a solid analytical approach for decision makers to direct their investments in the corresponding part of the supply chain that they are operating in to make the biggest possible impact of their investment on the supply chain through put. The model can be employed to generate improvement recommendations for different regions and decision makers can prioritize the presented recommendations according to their strategic goals.

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